Module 2.2

Brief interventions for **tobacco cessation** at the **primary health care level**
WHAT’S INSIDE

- Introduction
- Learning outcomes
- Topics covered
- Competency
- Teaching and learning activities
- Background information
INTRODUCTION

Tobacco consumption in any form—including smoking, chewing and snuff—and exposure to tobacco combustion products through passive or involuntary smoking contribute considerably to illness and premature deaths. Tobacco smoking is the largest single external and avoidable cause of death from cardiovascular diseases and cancers. Primary health care teams can play an effective role in providing personalized, clear, practical advice to tobacco users and those likely to use tobacco. This module covers practical training on providing brief interventions for tobacco users in the primary health care setting using the 5A’s and 5R’s approaches.

LEARNING OUTCOMES

At the end of the session, participants will be able to:

- Describe the health, social, economic and environmental impact of tobacco and second hand smoke exposure.
- Explain the types of tobacco use and nicotine dependence.
- Describe and deliver brief tobacco cessation interventions using the 5A’s and 5R’s techniques.

TOPICS COVERED

- Effects of tobacco on health, socioeconomic, and environmental consequences.
- Major forms of tobacco use – smoking and smokeless tobacco.
- Nicotine addiction and nicotine withdrawal symptoms.
- Brief advice for tobacco cessation (5A’s and 5R’s intervention).
- Pharmacotherapy for tobacco dependence.
- Role of primary health care workers in tobacco cessation and control.

COMPETENCY

- Deliver brief tobacco cessation interventions to tobacco users attending primary health care facilities.
TEACHING AND LEARNING ACTIVITIES

Time: 135 minutes

Activity 1. Types of tobacco use and its consequences:
15 minutes

Step 1. Ask the participants to briefly respond to the following questions. Write responses on a flip chart/white board:

- What are types and patterns of tobacco use in their countries?
- What are the effects and consequences of tobacco use?
- Is exposure to second-hand smoke common in your country?
- What are the health effects of exposure to second-hand smoke on adults and children?
- Are you aware of third-hand smoke?
- What are benefits of quitting tobacco?

Step 2. Present the powerpoint slides with the following contents:

- types of tobacco use and harmful chemicals
- health, social, economic and environmental consequences of tobacco
- adverse impact of exposure to second-hand smoke
- benefits of quitting.

Activity 2. Tobacco use and nicotine dependence:
15 minutes

Step 1. Ask the participants to briefly respond to the following questions. Write the responses on a flip chart/white board.

- Why people smoke or use tobacco?
- Why is it difficult to quit?
- What are elements of nicotine addiction?
- What are the symptoms of nicotine withdrawal?
- How can nicotine dependence be assessed among tobacco users?
- What are the effective tobacco cessation programmes that are available in your country?
Step 2. Present the powerpoint slides with following contents:

- elements of nicotine addiction
- nicotine dependence
- nicotine replacement therapy and pharmacological management.

Activity 3. Brief tobacco interventions in the primary health care level: 15 minutes

Step 1. Ask participants to share their experiences of talking to patients about tobacco use.

Facilitator’s explanatory notes

As a health professional, you may feel concerned as many tobacco users are resistant to change and you may not know how to reduce their resistance and support them to quit tobacco use. There are effective brief tobacco intervention models to help you talk to patients about quitting tobacco and deliver advice.

Generally, brief tobacco interventions are not intended to treat people with high tobacco dependence (heavy tobacco users). The primary purpose of a brief tobacco intervention is to help the patient understand the risks of tobacco use and the benefits of quitting, and to motivate them to make a quit attempt. Brief tobacco interventions can also be used to encourage those heavy tobacco users to seek or accept a referral to more intensive treatments within their community.

It is estimated that approximately 40% of tobacco users make some form of attempt to quit in response to advice from a doctor.

Step 2. Ask participants to share how giving advice on clinical issues (e.g. “you have asthma”) differs from giving advice on behaviour change (e.g. “you need to quit smoking”)?

Facilitator’s explanatory notes

Primary health care workers may feel more knowledgeable and confident to give advice on clinical issues because they know more than their patients, and they have clear instructions or advice for patients. However, giving advice on behaviour change is more than providing information and recommending solutions to patients. It involves helping patients discover their own solutions to their problems and to accept patients’ choices. It requires primary health care workers to establish a good relationship with patients, and to show empathy to them. The advice on behaviour change should be tailored to patients’ particular circumstances.

Step 3. Present the powerpoint slides with the following contents.

- role of a brief tobacco cessation intervention
- components and use of 5A’s
- components and use of 5R’s.
Activity 4. Review of the 5A’s algorithm on tobacco brief interventions: 30 minutes

Step 1. Divide the participants into convenient groups and discuss the algorithm.

Step 2. Ask the participants to discuss if there are ambiguities in the algorithm. Inform the participants that they will be referring this algorithm in the subsequent activities.

<table>
<thead>
<tr>
<th>5A’s</th>
<th>Tobacco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask</td>
<td>Have you smoked or used any other tobacco product in the past 12 months? (for example, cigarettes (including home-made), cigars, pipe, water-pipe, chewing tobacco, snuff):</td>
</tr>
<tr>
<td></td>
<td>Do you currently smoke or use any other tobacco product?:</td>
</tr>
<tr>
<td></td>
<td>Does anyone smoke around you at home or at work, or do you often go to places where there is a lot of smoke such as restaurants or bars?</td>
</tr>
<tr>
<td></td>
<td>If No to all these questions:</td>
</tr>
<tr>
<td></td>
<td>• Advise not to start tobacco use smoke and to avoid secondhand exposure</td>
</tr>
<tr>
<td></td>
<td>If Yes to any questions:</td>
</tr>
<tr>
<td></td>
<td>• Advise on risks of exposure to secondhand</td>
</tr>
<tr>
<td>Advise</td>
<td>Quitting tobacco is the most important thing you can do to protect your health now and in the future.</td>
</tr>
<tr>
<td></td>
<td>Advantages:</td>
</tr>
<tr>
<td></td>
<td>• Tobacco use is a major cause of heart attack and stroke, of serious lung problems and certain cancers.</td>
</tr>
<tr>
<td></td>
<td>• Tobacco can damage every part of the body.</td>
</tr>
<tr>
<td></td>
<td>• Secondhand smoke damages the health of your family and others around you.</td>
</tr>
<tr>
<td>Assess</td>
<td>1. Are you interested in quitting tobacco use?</td>
</tr>
<tr>
<td></td>
<td>2. Do you think you will succeed in quitting?</td>
</tr>
<tr>
<td></td>
<td>Question 1</td>
</tr>
<tr>
<td></td>
<td>Question 2</td>
</tr>
</tbody>
</table>

Any answer in the shaded area indicates that the person is not yet ready to change. In this case effort needs to be made to increase the motivation for change. Answers in the white area suggest that you and the patient can move on to the next step.
### 5A’s Tobacco

<table>
<thead>
<tr>
<th>Assist</th>
<th>Tobacco</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Set</strong></td>
<td>Help the patient to develop a quit plan using the STAR method:</td>
</tr>
<tr>
<td><strong>Tell</strong></td>
<td>Set a quit date, ideally within 2 weeks.</td>
</tr>
<tr>
<td><strong>Anticipate</strong></td>
<td>Tell family and friends about quitting and ask for support.</td>
</tr>
<tr>
<td><strong>Remove</strong></td>
<td>Anticipate challenges in the quit attempt.</td>
</tr>
<tr>
<td><strong>Provide practical counselling:</strong></td>
<td>Remove tobacco products from personal environment and make home smoke-free.</td>
</tr>
<tr>
<td></td>
<td>• Provide basic information about tobacco use and quitting.</td>
</tr>
<tr>
<td></td>
<td>• Help the patient to identify situations (e.g. feelings, places, activities) that could increase the risk of smoking or relapse.</td>
</tr>
<tr>
<td></td>
<td>• Help to identify and practise ways of coping with these situations. Provide social support.</td>
</tr>
<tr>
<td></td>
<td>• Provide encouragement in the quit attempt by showing care and concern.</td>
</tr>
<tr>
<td></td>
<td>• Encourage the patient to talk about the quitting process.</td>
</tr>
<tr>
<td></td>
<td>• Provide health education materials and information on additional resources, e.g. support groups, quit lines.</td>
</tr>
<tr>
<td><em>Recommend the use of medications if indicated and available, e.g. nicotine replacement therapy.</em></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Arrange</th>
<th>Refer to specialist support services if needed and available.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Follow-up:</strong></td>
<td>Refer to specialist support services if needed and available.</td>
</tr>
<tr>
<td></td>
<td>• Decide the timeline and method and schedule the next appointment.</td>
</tr>
<tr>
<td></td>
<td>• Ask about successes and challenges.</td>
</tr>
<tr>
<td></td>
<td>• For those who have quit: congratulate them on their success.</td>
</tr>
<tr>
<td></td>
<td>• For those who have used tobacco again:</td>
</tr>
<tr>
<td></td>
<td>– Remind them to view any failures as a learning experience.</td>
</tr>
<tr>
<td></td>
<td>– Review circumstances and encourage them to recommit to quitting.</td>
</tr>
<tr>
<td></td>
<td>– Link with more intensive support if available.</td>
</tr>
<tr>
<td></td>
<td>• For all patients:</td>
</tr>
<tr>
<td></td>
<td>– Identify problems and discuss ways to address them.</td>
</tr>
<tr>
<td></td>
<td>– Remind them of additional support and resources that are available.</td>
</tr>
<tr>
<td></td>
<td>– Assess use of medications and any problems experienced.</td>
</tr>
</tbody>
</table>

### HOW TO ASK ABOUT TOBACCO USE

Primary care providers should ask about tobacco use at EVERY patient visit, and document tobacco use status in the medical record. Please ask simple questions like:

- Do you use tobacco?
- Does anyone else smoke around you?

Asking and recording tobacco use status is the first important step towards helping patients stop tobacco use. Health facilities should make a system change to ensure that, for every patient at every visit, tobacco use status is asked and documented. One strategy could be to include tobacco use status in medical records as a “vital sign”.

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Brief interventions for **tobacco cessation** at the **primary health care level**
Step 3. Ask the participants to volunteer to play the role of a primary health care worker and fictional smokers (Hamid, Lisa and Mustafa). Each smoker will differ as to the demographic background, health status, family and social circumstances, and beliefs about smoking. Before each role play, the fictional smoker will introduce himself or herself.

Step 4. Ask primary care provider to:

- Ask about the patient’s smoking;
- Give some tailored advice using the following instructions.

<table>
<thead>
<tr>
<th>Smokers</th>
<th>Primary health care worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hamid: “I am a 57-year-old man with 10 grandchildren. I have a heart condition and breathing problems.”</td>
<td>Advice should refer to health, longer life and risk of exposure to second hand smoke among grandchildren.</td>
</tr>
<tr>
<td>2. Lisa: “I am a 25-year-old woman and I have just married. We hope to have a large family but we do struggle financially.”</td>
<td>Advice should refer to impact on fertility and the cost of smoking.</td>
</tr>
<tr>
<td>3. Mustafa. “I am a man aged 35.” Mustafa does not give much information. The volunteer will need to recognize this and should ask Mustafa what he doesn’t like about being a smoker. Once Mustafa answers, the volunteer should add extra information on the issue raised.</td>
<td>Mustafa does not give much information. The volunteer will need to recognize this and should ask Mustafa what he doesn’t like about being a smoker. Once Mustafa answers, the volunteer should add extra information on the issue raised.</td>
</tr>
</tbody>
</table>

Activity 5. Motivational support to quit tobacco using 5R’s:

30 minutes

Step 1. Ask participants to discuss why people continue to smoke or why don’t they quit?

Few common reasons may include:

- addiction
- everyone does it
- social activity
- after a meal
- stress relief
- when having coffee or tea
- emotional support
- sharing of cigarettes
- boredom/filling in time
- bonding/acceptance.

Step 2. Ask few participants to define “motivation”.

Facilitator’s explanatory notes

In general, motivation is the driving force by which humans achieve their goals. The word “motivation” here refers to “intrinsic motivation”: the key predictor of behaviour change. According to behavioural scientists, “intrinsic motivation” is an internal state that activates, directs and maintains behavior towards goals. In this workbook, we define it as the state of readiness to change.
Step 3. Ask few volunteers to share experiences of dealing with tobacco users who are not willing to quit.

Facilitator’s explanatory notes

Many health professionals find it impossible to create a positive dialogue with unmotivated patients about their behaviours. They often make patients angry and receive all kinds of excuses as to why these changes are not appropriate when they try to give advice to unmotivated patients. In this module, you will learn and practise using the 5R’s model and some other tools to deal with tobacco users who have low motivation to quit.

Step 4. Divide the participants into convenient groups and discuss the below table on 5R’s.

<table>
<thead>
<tr>
<th>5R’s</th>
<th>Strategies for implementation</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance</td>
<td>Encourage the patient to indicate how quitting is personally relevant to him or her. Motivational information has the greatest impact if it is relevant to a patient’s disease status or risk, family or social situation (e.g. having children in the home), health concerns, age, sex, and other important patient characteristics (e.g. prior quitting experience, personal barriers to cessation).</td>
<td>Health care worker (HCW): “How is quitting most personally relevant to you?” P: “I suppose smoking is bad for my health”</td>
</tr>
<tr>
<td>Risks</td>
<td>Encourage the patient to identify potential negative consequences of tobacco use that are relevant to him or her. Examples of risks are:  • Acute risks: shortness of breath, exacerbation of asthma, increased risk of respiratory infections, harm to pregnancy, impotence, and infertility.  • Long-term risks: heart attacks and strokes, lung and other cancers (e.g. larynx, oral cavity, pharynx, oesophagus, pancreas, stomach, kidney, bladder, cervix, and acute myelocytic leukemia), chronic obstructive pulmonary disease (chronic bronchitis and emphysema), osteoporosis, long-term disability, and need for extended care.  • Environmental risks: increased risk of lung cancer and heart disease in spouses; increased risk for low birth-weight, sudden infant death syndrome (SIDS), asthma, middle ear disease, and respiratory infections in children of smokers.</td>
<td>HCW: “What do you know about the risks of smoking to your health? What particularly worries you?” P: “I know it causes cancer. That must be awful.” HCW: “That’s right – the risk of cancer is many times higher among smokers.”</td>
</tr>
<tr>
<td><strong>SR’s</strong></td>
<td><strong>Strategies for implementation</strong></td>
<td><strong>Example</strong></td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| Rewards  | Ask the patient to identify potential relevant benefits of stopping tobacco use. Examples of rewards could include:  
- improved health  
- food will taste better  
- improved sense of smell  
- saving money  
- feeling better about oneself  
- home, car, clothing and breath will smell better  
- setting a good example for children and decreasing the likelihood that they will smoke  
- having healthier babies and children  
- feeling better physically  
- performing better in physical activities  
- improved appearance, including reduced wrinkling/ageing of skin and whiter teeth. | HCW: “Do you know how stopping smoking would affect your risk of cancer?”  
P: “I guess it would be lower if I quit.”  
HCW: “Yes, and it doesn’t take long for the risk to decrease. But it’s important to quit as soon as possible.” |
| Roadblocks| Ask the patient to identify barriers or impediments to quitting and provide treatment (problem-solving counselling, medication) that could address barriers. Typical barriers might include:  
- withdrawal symptoms  
- fear of failure  
- weight gain  
- lack of support  
- depression  
- enjoyment of tobacco  
- being around other tobacco users  
- limited knowledge of effective treatment options. | HCW: “So what would be difficult about quitting for you?”  
P: “Cravings – they would be awful!”  
HCW: “We can help with that. We can give you nicotine replacement therapy (NRT) that can reduce the cravings.”  
P: “Does that really work?”  
HCW: “You still need will-power, but study shows that NRT can double your chances of quitting successfully.” |
| Repetition| Repeat assessment of readiness to quit. If still not ready to quit repeat intervention at a later date. The motivational intervention should be repeated every time an unmotivated patient visits the clinic setting. | HCW: “So, now we’ve had a chat, let’s see if you feel differently. Can you answer these questions again...?”  
(Go back to the Assess stage of the 5A’s. If ready to quit then proceed with the 5A’s. If not ready to quit, end intervention positively.) |


**Tips for implementing the 5R’s model**

- Let the patient do the talking. Don’t give lectures!
- If the patient does not want to be a non-tobacco user – focus more time on “Risks” and “Rewards”.
- If the patient does want to be a non-tobacco user but does not think he or she can quit successfully, focus more time on “Roadblocks”.
- Even if patients remain not ready to quit, end positively with an invitation to them to come back to you if they change their minds.

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**Step 5. Role play of 5R’s interventions**

Ask participants to volunteer to play the role of two practitioners and two fictional smokers to assess two fictional smokers’ readiness to quit.

Each smoker will differ in his or her response when assessed for readiness to quit.

A. Hamid: “My smoking isn’t really a concern to me.” In role play, Hamid should express concern about heart disease.

B. Lisa: “I want to be a non-smoker but I could never quit – I’m very addicted.” In role play, Lisa should express concern about her stress levels while quitting.

In role play, the two volunteers should:

- complete the “Assess” questions appropriately in each case to indicate non-readiness to quit;
- deliver the 5R’s interventions in an appropriate way.

Note: In the case of Hamid, the 5R’s should be delivered, focusing on Risks and Rewards. In the case of Lisa, the 5R’s should be delivered with the focus on roadblocks.

**Activity 6. Arrange for follow-up contacts: 15 minutes**

**Step 1. Discuss briefly how to arrange the follow up and supporting quit attempt for the client. Make sure to cover when, how, what to do.**

*Facilitator’s explanatory notes*

**HOW TO ARRANGE FOLLOW-UP CONTACTS FOR THE PATIENT**

**When**

The majority of relapse occurs in the first two weeks after quitting. Therefore, follow-up contact should begin soon after the quit date. The first follow-up contact should be arranged during the first week.

A second follow-up contact is recommended within one month after the quit date.
**How**

Use practical methods such as telephone, personal visit and mail/e-mail to do the follow-up. Following up with patients is recommended to be done through teamwork if possible.

**What**

Below table describes all actions that primary care providers need to take during follow-up contacts

<table>
<thead>
<tr>
<th>For all patients</th>
<th>Identify problems already encountered and anticipate challenges.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Remind patients of available extra-treatment social support</td>
</tr>
<tr>
<td></td>
<td>• Assess medication use and problems</td>
</tr>
<tr>
<td></td>
<td>• Schedule the next follow-up contact.</td>
</tr>
</tbody>
</table>

| For patients who are abstinent                         | Congratulate them on their success.                              |
| For patients who have used tobacco again               | Remind them to view relapse as a learning experience.            |
|                                                       | • Review circumstances and elicit recommitment                   |
|                                                       | • Link to more intensive treatment if available.                 |

**HOW TO ASSIST PATIENTS IN MAKING A QUIT ATTEMPT**

For the patient who is willing to quit, the following actions can be taken to aid the patient in quitting:

- help develop a quit plan
- provide practical counselling
- provide intra-treatment social support
- help patient obtain extra-treatment social support
- recommend pharmacotherapy if appropriate
- provide supplementary materials.

Help develop a quit plan

Strategies for this action can be summarized by the acronym STAR.

- Set a quit date, ideally within two weeks.
- Tell friends, family and coworkers of the plan to quit, and ask for support.
- Anticipate challenges, particularly during the critical first few weeks, including nicotine withdrawal.
- Remove cigarettes from home, car and workplace and avoid smoking in these places. Make your home smoke-free.
Answer questions asked by patients who are willing to quit:

- What if I still have cravings?
- What if I smoke after quitting?
- Primary health care workers can answer the first question based on the following key points:
  - Cravings/urges occur even when smoking. Typically they are brief, lasting only 1–2 minutes.
  - There are many ways to deal with them. One good strategy is named “4Ds”:
    - Delay (every time you get the urge to puff, try to delay it as long as you can)
    - Deep breathing (deep breathing and meditation can help you relax yourself from within until the urge fades away)
    - Drink water (water refreshes the body and flushes out toxins)
    - Do something else (take a shower).
  - As time goes on, urges will occur less often and will become less intense.
- Primary care providers can answer the second question as follows:
  - Relapse is common. Most people make multiple attempts before they are successful.
  - If you smoke after quitting:
    - don’t blame yourself (none of us is perfect)
    - use the relapse as a learning experience rather than as a sign of failure
    - just try another quit attempt.

Step 2. Discuss Hamid’s follow-up contacts by answering WHEN, HOW and WHAT should be done. Present the follow up table:

<table>
<thead>
<tr>
<th>Questions</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHEN</td>
<td></td>
</tr>
<tr>
<td>HOW</td>
<td></td>
</tr>
<tr>
<td>WHAT</td>
<td></td>
</tr>
</tbody>
</table>
**Practical test: 15 minutes**

Practice is important for you to improve your confidence and skills in delivering brief tobacco interventions. You will now do a role play to practise 5A’s and 5R’s brief tobacco interventions.

**Step 1. Invite two volunteers to role-play a brief intervention in front of the group:**

- Volunteer 1 will be a primary health care worker who attempts to address the patient’s smoking.
- Volunteer 2 will be a forty year old male, satisfied smoker who is not especially keen to stop.

**Step 2. Ask the rest of the participants to observe the brief intervention session.**

**Step 3. Ask few participants to share their observations to the whole group.**

Record the observations under 5A’s in the table provided in your workbook:

<table>
<thead>
<tr>
<th>Areas of A’s</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td></td>
</tr>
<tr>
<td>ADVICE</td>
<td></td>
</tr>
<tr>
<td>ASSESS</td>
<td></td>
</tr>
<tr>
<td>ASSIST</td>
<td></td>
</tr>
<tr>
<td>ARRANGE</td>
<td></td>
</tr>
</tbody>
</table>

Also complete the following table on 5R’s in the table provided in your workbook:

<table>
<thead>
<tr>
<th>Areas of R’s</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance</td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td></td>
</tr>
<tr>
<td>Rewards</td>
<td></td>
</tr>
<tr>
<td>Roadblock</td>
<td></td>
</tr>
<tr>
<td>Repetition</td>
<td></td>
</tr>
</tbody>
</table>
BACKGROUND INFORMATION

Tobacco use
Tobacco kills nearly half its users and causes more than 7 million deaths every year. Nearly 10 per cent of these deaths are the result of inhaling second-hand smoke in homes, restaurants, offices or other enclosed spaces.

What is tobacco use?
Tobacco can be smoked, sucked, chewed or snuffed, applied or gargled. Tobacco products can generally be divided into two types: smoked tobacco (in cigarettes, cigars, pipes and water pipes); and smokeless tobacco (in chewing tobacco, snuff, dentrifice and tobacco water). All tobacco products contain the addictive substance nicotine that is absorbed into the bloodstream when a tobacco product is used. Globally, cigarette smoking is the most common form of tobacco use but smokeless tobacco has high prevalence in many SEAR countries.

Consequences for health
All tobacco products are harmful. Tobacco smoke contains at least 7000 harmful chemicals and at least 69 are known to cause cancer. Tobacco use can damage every part of the body and is one of the main risk factors for non-communicable diseases (CVDs, COPD, DM and cancers) and is associated with communicable diseases such as tuberculosis and HIV/AIDS. Tobacco use contributes to a range of other diseases (see Box 1) and exposes family and other people to health risks through second-hand smoke (see Box 2).
Brief interventions for tobacco cessation at the primary health care level

Box 1: Diseases caused by tobacco use

○ Cardiovascular system:
  - Heart attack/angina
  - Stroke/transient ischaemic attack
  - Peripheral vascular disease
  - Aortic aneurism
○ Diabetes
○ Respiratory system:
  - Shortness of breath
  - Exacerbated asthma
  - Chronic obstructive pulmonary disease
  - Respiratory infections
○ Cancers:
  - Larynx, oropharynx, oesophagus, trachea, bronchus, lung, acute myeloid leukaemia, pancreas, stomach, colon, kidney, cervix, bladder
○ Eyes:
  - Blindness
  - Cataract
○ Mouth:
  - Gum disease
○ Bones:
  - Osteoporosis
  - Hip fractures
○ Reproductive system:
  - Impotence
  - Infertility
  - Miscarriage
  - Premature birth
  - Low birth weight

Box 2: Diseases that can result from exposure to second-hand smoke

<table>
<thead>
<tr>
<th>Diseases in children</th>
<th>Diseases in adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Sudden infant death syndrome</td>
<td>○ CVD</td>
</tr>
<tr>
<td>○ Acute respiratory disease</td>
<td>○ Nasal irritation</td>
</tr>
<tr>
<td>○ Middle ear disease</td>
<td>○ Lung cancer</td>
</tr>
<tr>
<td>○ Chronic respiratory symptoms</td>
<td>○ Reproductive effects in women</td>
</tr>
</tbody>
</table>

Economic consequences

The costs of tobacco use include illness, disability, premature death, and foregone consumption and investment. Progress has been made during the past decade on estimating the costs of smoking and tobacco use. These estimates are useful in documenting the economic burden of tobacco use and motivating the policy makers to implement strong tobacco control policies. A recent study found that diseases caused by smoking accounted for 5.7% of global health expenditures in 2012, while the total economic cost of smoking was equivalent to 1.8% of global GDP. Smoking imposes a heavy economic burden throughout the world.

1 Global economic cost of smoking-attributable diseases: Mark Goodchild, Nigar Nargis, Edouard Tursan d’Espaignet
There is ample evidence to suggest that the economic costs of tobacco use are substantial and include significant health care costs for treating the diseases caused by tobacco use and the lost productivity that results from tobacco attributable morbidity, disability and mortality. Cost of Illness studies often categorize direct costs into either healthcare or non-healthcare expenditures. Healthcare expenditures are those incurred from the diagnosis and treatment of smoking-attributable diseases (hospitalization, physician services, medications, etc), while non-healthcare expenditures are incurred outside of the health system (eg, property loss from fires caused by cigarettes).

The countries should make efforts to generate their own evidence on economic costs of tobacco. The total economic cost attributable to tobacco use from all diseases in India in the year 2011 (for persons aged 35-69) amounted to nearly US$ 22.4 billion.

Tobacco use takes away not just health but also wealth. The smoking cost calculator can be used to estimate financial losses:

<table>
<thead>
<tr>
<th>Number of packs a person smokes per year</th>
<th>Number of years smoked</th>
<th>Average price of pack of cigarettes</th>
<th>Amount spent on smoking in lifetime</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

**Social consequences**

In many cultures, tobacco use is viewed negatively, for example, a smoker may be considered dirty, smelling badly or being unhealthy. Smoking can therefore affect personal relationships. Children of smokers are more likely to smoke, and to smoke more heavily at a young age.

In many countries small children are employed in tobacco farming or tobacco industry such as bidi rolling in India, amounting to child labour and exploitation.

**Environmental effects**

In many tobacco growing countries, evidence indicates irreparable environmental damage from tobacco agriculture, particularly when associated with the deforestation necessary to increase farmland for tobacco growth and cure tobacco plants.

In many developing countries, wood is used to cure tobacco leaves and to construct curing barns. An estimated 200,000 hectares of forests and woodlands are cut down each year because of tobacco farming.

Environmental degradation also results from the tobacco plant leaching nutrients from the soil, as well as pollution from pesticides and fertilizers. Indeed, large and frequent applications of pesticides are required to protect the plant from insects and disease. This not only causes severe health problems to the farmers, as they are not properly equipped and trained to use these chemicals, but it also decreases the long term fertility of the soil and pollutes the groundwater and waterways often used by populations downstream.

The manufacturing of tobacco products also produces an immense amount of waste. In 1995, the global tobacco industry produced an estimated 2.3 billion kilograms of manufacturing waste and 209 million kilograms of chemical waste. This does not include the enormous amount of litter
caused by cigarette butts, which are not bio-degradable. According to one estimate, 954 million kilograms worth of filters were produced in 1998, with many of them eventually littering countries’ streets, waterways and parklands. Compounding the extent of this problem is the waste created by cigarette packaging, lighters, matches and other polluting by-products of tobacco use.

**What are the benefits of quitting tobacco?**

Quitting tobacco is the best action a user can take to improve their health. Quitting has immediate and long-term health benefits for all users, including living up to 10 years longer. The sooner a person quits, the sooner the effects of tobacco can start to be reversed.

- **Benefits to health**
  
  Within a few months of quitting smoking, coughing and shortness of breath decrease, and within 1 year the person’s risk of heart attack and angina is about half that of a smoker. Fifteen years after quitting, the risk of heart attack and angina is the same as that of a non-smoker. Additionally, quitting smoking after a heart attack reduces the chances of having another heart attack by 50%.

  Quitting tobacco reduces the likelihood of problems such as impotence, difficulties in getting pregnant, premature births, babies with low birth weights, and miscarriage. It also decreases the risk of diseases related to second-hand smoke in children, such as asthma and middle-ear disease.

  Other benefits to quitting smoking are being better able to taste food; an improved sense of smell; feeling better physically; performing better in physical activities; improved appearance, including reduced wrinkling/aging of skin, and whiter teeth. It also improves the health of family members.

- **Financial benefits**
  
  Money previously spent on tobacco is saved, as well as the potential health care costs related to illnesses caused by tobacco. The same can be utilized to meet the health, food, education and other needs of the family.

- **Social benefits**
  
  Quitting decreases absenteeism and improves productivity and quality of life. Quitters will be able to expand their social interactions. When tobacco users quit, their children become less likely to start tobacco use and more likely to quit if they already use it.

**What are elements of nicotine addiction?**

**Physical/physiological addiction**

*Nicotine*

Nicotine is as addictive as many illegal drugs. Nicotine has been shown to have effects on brain dopamine systems similar to those of drugs such as heroin and cocaine. Nicotine increases the number of nicotinic receptors in the brain.
Inhalation (smoking) is the quickest way for nicotine to reach brain (within 7–10 seconds). As a smoker, your brain and body get used to functioning with a certain level of nicotine. Your nicotine level will drop dramatically one or two hours after your last cigarette (the half-life of nicotine is 120 minutes), and then you will crave nicotine (cigarettes). If you stop smoking suddenly, the absence of nicotine in your brain (the nicotinic receptors in your brain are empty) will make you feel uncomfortable and cause withdrawal symptoms.

**Nicotine dependence**

This is often referred to as addiction. This happens because of certain brain changes. Features of addiction are:

- carving: a strong desire to use the nicotine
- withdrawal symptoms
- increase and regular use
- use despite harm
- difficulty in controlling use
- use despite knowing harmful effects

**Nicotine withdrawal symptoms**

Nicotine withdrawal symptoms refer to a group of symptoms (the physical and mental changes) that may occur from suddenly stopping the use of tobacco. Withdrawal is the adjustment of the body to living without nicotine, positively referred to as recovery symptoms. They are normally temporary (2–4 weeks) and are a product of the physical or psychological adaptation.

Most smokers know about withdrawal symptoms through hearsay or from direct experience. They can be a major barrier against staying quit, or even attempting to quit in the first place. Some common nicotine withdrawal symptoms are:

- headaches
- restlessness
- coughing
- decreased heart rate
- cravings
- difficulty concentrating
- increased appetite or weight gain
- influenza-like symptoms
- mood changes (sadness, irritability, frustration, or anger)
- insomnia.
Emotional/psychological connection

Smokers link feelings with cigarettes via the process of withdrawal and “operant conditioning”. Here are some of the emotional connections that may be associated with smoking: when smokers feel stressed, happy, sad or angry, they will get craving for a cigarette. In fact, using cigarettes to calm your nerves or cope with stress is misguided. It does not help solve the source of your problems.

Other psychological factors relevant to smoking are cognitions (i.e. thoughts and beliefs). Smokers who do not want to quit may have positive thoughts and beliefs on smoking, such as:

- “It helps me relax.”
- “It’s not really that harmful!”
- “It’s cool to smoke!”
- “It keeps my weight down.”

Habitual and social connection

Smoking is a tenacious habit precisely because it is so intimately tied to the everyday acts in smokers’ lives. Smokers link behaviour with cigarettes via the process of “operant conditioning”.

It is not easy to let go of something that’s been such an integral part of a smoker’s life for so long. Smoking may be associated with the following habits or behaviour: having coffee or tea, the end of meal, making a phone call, watching television, driving.

Smoking is also prone to social influences. Children and adolescents are more likely to start smoking if their parents or people they respect and admire smoke. Smoking with friends is a way to socialize with them.

Interactions between the three elements of tobacco addiction

The physical, psychological and social influences are not independent of each other. All three types of factors influencing smoking need to be explored and referred to when you provide support for tobacco users to quit.

Additional reading resources

5. Guidelines for the implementation of article 14 of the WHO Framework Convention on Tobacco Control (Demand reduction measures concerning tobacco dependence and cessation) –Annex.
6. HEARTS Healthy lifestyle Counselling for tobacco cessation, diet, physical activity, alcohol use and self-care to prevent cardiovascular disease.
Brief interventions for tobacco cessation at the primary health care level

Activity 1: Step 2

Tobacco use and harmful chemical in cigarettes

Types of tobacco use:
- Smoked tobacco (in cigarettes, cigars, pipes and water pipes)
- Smokeless tobacco (in chewing tobacco, snuff, dentifrice and tobacco water)
- Tobacco smoke has more than 7000 chemical compounds including known carcinogens.
### Benefits of quitting tobacco

<table>
<thead>
<tr>
<th>Within...</th>
<th>Recovery has likely progressed to the point where your addiction is no longer doing the talking. Blood circulation in your gums and teeth are now similar to that of a non-user.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 days to 2 weeks</td>
<td>Your heart attack risk has started to drop. Your lung function is beginning to improve.</td>
</tr>
<tr>
<td>2 to 4 weeks</td>
<td>The number of acetylcholine receptors, which were up-regulated in response to nicotine’s presence in the frontal, parietal, temporal, occipital, basal ganglia, thalamus, brain stem, and cerebellum regions of the brain, have now substantially down-regulated, and receptor binding has returned to levels seen in the brains of non-smokers (DERS study).</td>
</tr>
<tr>
<td>21 days</td>
<td>Your circulation has substantially improved. Walking has become easier. Your chronic cough, if any, has likely disappeared. If not, get seen by a doctor, and sooner if in all concerned, as a chronic cough can be a sign of lung cancer.</td>
</tr>
<tr>
<td>3 weeks to 3 months</td>
<td>Plasma sUKN4 is a stable inflammatory biomarker predictive of development of diseases ranging from diabetes to cancer in smokers. A 2016 study found that within 4 weeks of quitting smoking, with or without MRT, that sUKN4 levels in 48 former smokers had fallen from a baseline smoking median of 5.2 ng/ml to levels “no longer significantly different from the never smokers’ values” (I. J. H. M. B.).</td>
</tr>
<tr>
<td>4 weeks</td>
<td>Insulin resistance in smokers has normalized despite average weight gain of 2.7 kg (2010 SFAR, page 384).</td>
</tr>
</tbody>
</table>
Benefits of quitting tobacco

<table>
<thead>
<tr>
<th>Within</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 9 months</td>
<td>Any smoking related sinus congestion, fatigue or shortness of breath has decreased. Cilia have regrown in your lungs, thereby increasing their ability to handle mucus, keep your lungs clean and reduce infections. Your body's overall energy has increased.</td>
</tr>
<tr>
<td>1 year</td>
<td>Your excess risk of coronary heart disease, heart attack and stroke has dropped to less than half that of a smoker.</td>
</tr>
<tr>
<td>5 years</td>
<td>Your risk of a sudden cardiac death has declined to 50% of your risk while still smoking (2002 study). If female ex-smoker, your risk of developing diabetes is now that of a non-smoker (2001 study).</td>
</tr>
<tr>
<td>5 to 15 years</td>
<td>Your risk of stroke has declined to that of a non-smoker.</td>
</tr>
<tr>
<td>10 years</td>
<td>Your risk of being diagnosed with lung cancer is between 30% and 50% of that for a continuing smoker (2005 study). Risk of death from lung cancer has declined by almost half if you were an average smoker (one pack per day). Risk of cancer of the mouth, throat, esophagus and pancreas have declined. Risk of developing diabetes for both men and women is now similar to that of a never-smoker (2001 study).</td>
</tr>
<tr>
<td>15 years</td>
<td>The average smoker who is able to live to age 75 has 5.8 fewer teeth than a non-smoker (1998 study). But by year 13 after quitting, your risk of smoking induced tooth loss has declined to that of a never-smoker (2006 study).</td>
</tr>
<tr>
<td>20 years</td>
<td>Female excess risk of death from all smoking related causes, including lung disease and cancer, has now reduced to that of a never-smoker (2000 study). Risk of pancreatic cancer has declined to that of a never-smoker (2011 study).</td>
</tr>
</tbody>
</table>

Activity 2: Step 2

Physical addiction - nicotine’s role

- A major factor that maintains a tobacco use over time is addiction to nicotine
- Nicotine
  - Not a carcinogen
  - Liquid in its native state
  - Distilled from burning tobacco and carried on tar droplets
  - Only free(un-protonated) nicotine crosses biological membranes
  - Half-life 120 minutes
Physical addiction - nicotine’s role

- Nicotine has been shown to have effects on brain dopamine systems similar to those of drugs such as heroin and cocaine.
- **Positive reinforcement:** binds to the nicotinic receptors, causing the release of dopamine, which makes tobacco users feel good.
- **The quickest delivery of nicotine:** inhalation in the form of smoke.
- **Tolerance:** it gradually increases the number of nicotinic receptors in the brain and tobacco users need amounts of tobacco in order to achieve the same levels of satisfaction.
- **Negative reinforcement:** reducing withdrawal symptoms.

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Elements of nicotine addiction

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The cycle of nicotine addiction

- **Nicotine binding causes an increase in release of dopamine**
- **Dopamine gives feelings of pleasure and calmness**
- competitive binding of nicotine to nicotinic acetylcholine receptors causes prolonged activation, desensitization, and upregulation

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1. *American J Health Promot* 2007 21(2) S47

Brief interventions for **tobacco cessation** at the **primary health care level**
Nicotine withdrawal

When receptors are empty, they make you feel uncomfortable and increase your urge to smoke

Nicotine withdrawal: Duration

2 days
- Lightheadedness
- Sleep disturbance

1 week
- Poor concentration
- Craving for nicotine

2 weeks
- Irritability or aggression
- Depression
- Restlessness

4 weeks
- Increased appetite

Tobacco cessation medications

- Nicotine replacement therapy (NRT): nicotine gum, nicotine patches, nicotine nasal spray, nicotine inhaler, nicotine lozenges/sublingual tablets
- Non-nicotine medications: bupropion sustained release (SR), varenicline, cytisine, clonidine, triptyline.

Activity 3: Step 3
### Brief tobacco interventions

Brief interventions (5A’s, 5R’s) in clinical setting are

- **Feasible:** an opportunistic intervention, can be done within 3-5 minutes
- **Effective:** 40% will make quit attempt, increase quit rate by 30%
- **Efficient:** very cost effective, with the potential to reach more than 80% of the general population at least once per year.

### Role of brief intervention in tobacco cessation

- Minimal intervention lasting less than three minutes increases overall tobacco abstinent rates
- Clinical settings that fully implement all of the 5A’s show better results than those with partial or inconsistent use of the 5A’s
- Health care providers play an important role in tobacco cessation.

### Components of 5A’s

- Ask – systematically identify all tobacco users at every visit
- Advise – advise all tobacco users that they need to quit
- Assess – determine readiness to make a quit attempt
- Assist – assist the patient with a quit plan or provide information on specialist support
- Arrange – schedule follow-up contacts or a referral to specialist support.
Components of 5R’s

- Relevance – how is quitting most personally relevant to you?
- Risks – what do you know about the risks of smoking in that regard?
- Rewards – what would be the benefits of quitting in that regard?
- Roadblocks – what would be difficult about quitting for you?
- Repetition – repeat assessment of readiness to quit; if still not ready to quit, repeat intervention at a later date.

When is someone ready to quit

- Method 1: Ask two questions in relation to “importance” and “self-efficacy”:
  - “Would you like to be a non-tobacco user?”
  - “Do you think you have a chance of quitting successfully?”
- Method 2: Ask just one question:
  - “Would you like to quit tobacco within the next 30 days?”
- If the answer of any of above is “no”, this indicates that the tobacco user is NOT ready to quit and we should deliver the 5R’s intervention.

When do we deliver the 5R’s?

We deliver the 5R’s following the Assess stage in the 5A’s, after we have asked the following questions...

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>Not sure</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you interested in quitting tobacco use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think you will succeed in quitting?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Any answer in the shaded area indicates that the tobacco user is NOT ready to quit and we should deliver the 5R’s interventions.
Video screening practice on 5A’s and 5R’s

- Motivational interview for tobacco cessation
  https://www.youtube.com/watch?v=JfH0Sbjg4
  https://www.youtube.com/watch?v=YfZCGH7fyw
- Behavioral Health and Wellness Program, University of Colorado, Anschutz Medical Campus, School of Medicine
  https://www.youtube.com/watch?v=5LoE0cFY2GQ
- Conversations for change: The Five A’s and tobacco cessation. Behavioral Health and Wellness Program, University of Colorado, Anschutz Medical Campus, School of Medicine.

The WHO e-Learning course for training primary health care providers: brief tobacco interventions

The WHO e-Learning course “Training for primary care providers: brief tobacco interventions” is converted from Part III of WHO training package “Strengthening health systems for treating tobacco dependence in primary care”, which was published in 2013 to assist countries in taking one of their first steps towards providing comprehensive tobacco dependence treatment to all tobacco users by integrating brief tobacco interventions (brief advice) into primary care.

http://www.who.int/tobacco/quitng/training-for-primary-care-providers/en/